

*We claim:*

1. An apparatus for recording a multichannel program comprising:
  - an audio converter adapted to convert said multichannel program at least partially into a modified program requiring less channels than said multichannel program, said audio converter including control elements used to modify the conversion process used to generate said modified program;
  - a coefficient generator coupled to said converter to generate a coefficient indicative of the operation of said controls;
  - a mixer arranged to mix said coefficient with program data corresponding to said program; and
  - a recorder arranged to record the mixed data on a medium, whereby the medium can be played either using a multichannel player device or a reduced channel player device by using said coefficient.
2. The apparatus of claim 1 wherein said audio converter includes a plurality of controls adapted to be activated by an operator, said plurality of controls having corresponding positions, and wherein said coefficient generator includes sensors arranged to sense the positions of said controls, said coefficient generator being adapted to translate said positions into coefficients.

3. The apparatus of claim 1 wherein said audio converter includes a variable resistor having a resistor position, and wherein said coefficient generator includes a sensor that senses the position of said variable resistor.
  4. The apparatus of claim 1 wherein said audio converter is adapted to convert a multichannel program into a dual program that can be played through a stereo player.
  5. An apparatus for generating conversion coefficients characteristic of a process for converting a multichannel program into a modified program, said apparatus comprising:
    - an audio converter including an input for receiving multichannel signals of a multichannel program and a control circuit adapted to operate on said signals to generate modified signals of a modified program in accordance with a selectable parameter; and
    - a sensor adapted to determine said parameter and to generate a coefficient corresponding to said parameter.
  6. The apparatus of claim 5 wherein said audio converter is adapted to generate modified signals defining a dual channel program from said multichannel signals.

7. The apparatus of claim 5 wherein said control circuit includes a plurality of control elements, each element having a plurality of positions and wherein said sensor detects said positions and generates coefficients indicative of said positions.
8. The apparatus of claim 5 wherein said control elements include a variable resistor which is adjusted by an operator and said sensor is adapted to sense a current value of said variable resistor, said coefficient being dependent on said current value.
9. The apparatus of claim 5 wherein said control circuit includes a variable resistor with a shaft that can be rotated to alter a current resistor value and wherein said sensor is adapted to sense a position of said shaft.
10. The apparatus of claim 9 wherein said sensor includes a shaft encoder that generates a shaft signal, said sensor generating said coefficient based on said shaft signal.
11. The apparatus of claim 5 wherein said control circuit includes a variable resistor, and said sensor includes a voltage detector for detecting a current voltage on said variable resistor.

12. The apparatus of claim 11 wherein said voltage detector detects an analog voltage and said sensor further includes an analog-to-digital converter that converts said analog voltage into said coefficient.

13. A method of generating a data storage medium with a multichannel program comprising the steps of :

receiving a multichannel program;

generating a modified program corresponding to said multichannel program in accordance with a selectable parameter;

detecting said selectable parameter;

generating a coefficient corresponding to said selectable parameter;

combining said coefficient and said multichannel to form combined digital data; and

recording said combined digital data on the medium.

14. The method of claim 13 wherein said step of generating a modified program includes generating a dual channel program.

15. The method of claim 13 wherein said step of generating said modified program includes changing said operational parameter until said modified program has certain target characteristics.

16. The method of claim 15 wherein said step of generating said modified program is performed using a circuitry with a control having a variable position, wherein said step of determining said parameter includes determining a current position of said control.

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